CLAIMS

What is the claimed is:

1. A method for counting and measuring a particles illuminated by a light beam and including the steps, wherein:

detecting said light beam by a light detecting system, including a chamber of said light detecting system, inside which a particle flow intersects a light beam in an area of a light detection means, placed on a light beam axis, and wherein an intersection of said light beam and said particle flow is occurred on said light beam axis between a light beam source and said light detection means;

detecting said light beam, which is obstructed by a different sizes of said particles of said particle flow, has a differing intensity of said light beam on said light detection means or a different durations of said intensity;

detecting said differing intensity of said light beam or said different durations of said intensity by said light detection means, which transfers a detected signals for a detected signal processing to a processing system.

2. The method of claim 1, wherein said detected signal processing is provided by an amplitude comparison of said detected signals with an appropriate reference voltages, determined by an appropriate sizes of said particles of said particle flow.

3. The method of claim 2, wherein said detected signals are amplified before said amplitude comparison.

4. The method of claim 1, wherein said detected signal processing is provided by a timing processing of said detected signals by strobing said detected signals by a strobe pulses, and wherein a strobed pulses have said different duration, determined by said different sizes of said particles of said particle flow, passing through said light beam.

5. The method of claim 4, wherein said detected signals are amplified and transformed to a digital forms before said timing processing.

6. A device for counting and measuring a particles, including a light detecting system and a processing system.

7. The device of claim 6, wherein said light detecting system includes a chamber, a light beam, a particle flow, a tubular particle flow means and a light detection means, wherein said particle flow intersects said light beam on a light beam axis in an area of said light detection means, which is placed on said light beam axis.

8. The device of claim 7, wherein said particle flow intersects said light beam on said light beam axis at a point, which is between a light beam source and said light detection means.

9. The device of claim 7, wherein said tubular particle flow means is interrupted in said area

of said light detection means for an airborne particle analysis.

10. The device of claim 6, wherein said processing system includes an analog-digital subsystem and a control subsystem.

11. The device of claim 10, wherein said analog-digital subsystem is connected to a light detecting system, and by a multiplexed bus is connected to said control subsystem, which includes a microprocessor subsystem and a terminal means, connected by said multiplexed bus.

12. The device of claim 11, wherein said multiplexed bus is splited on a data bus and an address bus, and a digital data exchange is provided by said data bus and said address bus.

13. The device of claim 11, wherein said terminal means includes a display means, a printing means, a compact disc means, a floppy disc means, connected by said multiplexed bus, and an external interface means.

14. The device of claim 10, wherein said analog-digital subsystem for an amplitude processing of a signals from a light detecting system includes a an amplifying means, connected to a comparison means, connected to an analog-digital converting means, and a reference voltage means, connected to said comparison means.

15. The device of claim 10, wherein said analog-digital subsystem for a timing processing of a signals from a light detecting system includes an amplifying means, connected to a pulse fo.ming

means.

16. A device for counting and measuring a particles includes a light detecting system, a processing system, a remote light beam source and a fiber optic means.

17. The device of claim 15, wherein said remote light beam source is connected to said light detecting system by said fiber optic means.

THE DRAWING REFERENCE NUMERALS WORKSHEET

1. - a device axis;

2. - a light beam axis;

3. - a particle flow axis;

4. - a light detection means;

5. - a light detector;

6. - a focused scattered light;

7, - an unfocused scattered light;

8. - a first focus;

9. - a second focus;

10. - an optical system;

11. - a light detecting system;

12. - a chamber;

13. - a control subsystem;

14. - an analog-digital subsystem;

15. - an amplifying means;

~~16.~~ - a comparison means;

17. - an ellipsoidal mirror;

18. - a non-divergent quadric mirror;

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~~19~~. - a reference voltage means;

20. - a microprocessor subsystem;

21. - a terminal means;

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~~22~~. - an analog-digital converting means;

23. - an unconsidered scattered light;

24. - a pulse forming means;

25. - a multiplexed bus;

26. - a particle flow tubular means;

27. - a processing system;

28. - a remote light beam source;

29. - a fiber optic means.